

SEMICONDUCTOR STRUCTURE AND METHOD OF MAKING SAME**ABSTRACT**

5 A semiconductor structure includes a substrate having a surface and being
made of a material that provides atypical surface properties to the surface, a bonding
layer on the surface of the substrate, and a further layer molecularly bonded to the
bonding layer. A method for fabricating such a semiconductor structure includes
10 providing a substrate having a surface and being made of a material that provides
atypical surface properties to the surface, providing a bonding layer on the surface of
the substrate, smoothing the bonding layer to provide a surface that is capable of
molecular bonding, and molecularly bonding a further layer to the bonding layer to
form the structure. The atypical surface properties preferably include at least one of a
15 roughness of more than 0.5 nm rms, or a roughness of at least 0.4 nm rms that is
difficult to polish, or a chemical composition that is incompatible with molecular
bonding.

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